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IN THE CLAIMS

Claim 1. (Previously Presented) A method of switching frames at a first switch on a communication network, comprising the steps of:

receiving a frame at a first switch;

extracting frame contained destination information from the received frame;

making a switching decision within the first switch based on the extracted frame contained destination information without performing a lookup in a forwarding table to determine an output port from the first switch over which the frame should be forwarded onto the communication network;

forwarding the frame within the switch to the output port over which the frame should be forwarded onto the communication network; and

transmitting said frame from the determined output port onto the communication network;

whereby a received frame may be transmitted from an input port to a determined output port and then onto the communication network based on the frame contained destination information without performing a table lookup operation to determine the output port.

Claim 2. (Previously Presented) The method of claim 1, wherein the step of receiving a frame at a first switch comprises reading a portion of a header of the frame and causing the frame to be passed directly to the output port without performing a table lookup operation.

Claim 3. (Original) The method of claim 1, wherein the frame contained destination information comprises a portion of a Media Access Control (MAC) address.

Claim 4. (Original) The method of claim 3, wherein the MAC address is a local destination MAC address.

Claim 5. (Previously Presented) The method of claim 3, wherein extracting comprises reading a field of the MAC address, the field of the MAC address being a selected number of bits of the MAC address smaller than the total number of bits of the MAC address and located at a

particular location within the MAC address, and wherein ascertaining comprises using information in the field to identify the output port.

Claim 6. (Original) The method of claim 5, wherein ascertaining comprises reading at least a second field of the MAC address.

Claim 7. (Original) The method of claim 1, wherein the frame contained destination information comprises a local Media Access Control (MAC) address having at least two fields, a first of said fields containing information for the first switch and a second of said fields containing information for a second switch connected to an interface of the first switch.

Claim 8. (Original) The method of claim 7, wherein extracting comprises reading the first and second fields.

Claim 9. (Previously Presented) The method of claim 8, wherein ascertaining comprises comparing, by the first switch, information in the second field with expected information, and selecting as the output port an ~~the~~ output port on the first switch that is connected to said second switch if the information in the second field does not match the expected information.

Claim 10. (Currently Amended) A protocol data unit data structure stored in a tangible computer readable medium, the protocol data unit data structure comprising:

a destination Media Access Control (MAC) address, the destination MAC address being a local MAC address having a plurality of fields, each of the fields including a number of bits smaller than a total number of bits of the destination MAC address, and each of the fields containing a code to be used by a switch on a network to identify an output port on the switch without performing a table lookup operation to enable the switch on the network to make a forwarding decision for the protocol data unit, wherein each of the fields is to be used by a different switch on the network; and

a payload portion.

Claims 11-14. (Canceled)

Claim 15. (Previously Presented) A method of assigning a Media Access Control (MAC) address to an interface on a network, comprising:

setting a local bit in the MAC address to indicate to network elements on the network that the MAC address is locally assigned; and

assigning a first value to a first field of the MAC address, the first field containing a smaller number of bits than a total number of bits of the destination MAC address, said first value containing first output interface information usable by a first switch to identify a first output interface for transmission of frames containing the first value in the first field of said MAC address.

Claim 16. (Original) The method of claim 15, further comprising collecting the first output interface information from the first switch.

Claim 17. (Previously Presented) The method of claim 15, further comprising assigning a second value to a second field of the MAC address, the second field containing a smaller number of bits than the total number of bits of the destination MAC address, said second value containing second output interface information usable by a second switch to identify a second output interface for transmission of frames containing the second value in the second field of said MAC address.

Claim 18. (Original) The method of claim 17, further comprising collecting the second output interface information from the second switch.

Claim 19. (Original) The method of claim 15, further comprising transmitting the MAC address to a network device containing said interface to which the MAC address has been assigned.

Claim 20. (Original) The method of claim 19, further comprising setting the network device in promiscuous mode to cause the network device to receive said MAC address.

Claim 21. (Original) The method of claim 15, further comprising a step of assigning a second field of the MAC address according to a prefix of the first switch.

Claim 22. (Original) The method of claim 21, wherein the prefix is a portion of all local MAC addresses that are reachable through the first switch.

Claim 23. (Canceled)